



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/005,024      | 12/04/2001  | David H. Hartke      | 115.19USU1          | 9699             |

22462 7590 02/13/2003

GATES & COOPER LLP  
HOWARD HUGHES CENTER  
6701 CENTER DRIVE WEST, SUITE 1050  
LOS ANGELES, CA 90045

EXAMINER

DINH, TUAN T

ART UNIT PAPER NUMBER

2827

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/005,024

Applicant(s)

HARTKE ET AL.

Examiner

Tuan T Dinh

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 3-7, 11 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 8-10 and 12-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Applicant's election without traverse of Specie IV (figure 4), claims 1-2, 8-15 in Paper No. 8 is acknowledged.

Claim 11 is depended of claim 6, which is not elected by applicant, therefore, claim 11 is withdrawn from further consideration.

Claims 1-2, 8-10, and 12-15 are exam by examiner as below:

#### ***Claim Objections***

2. Claim 1 is objected to because of the following informalities:

Claim 1, line 11, change "the flexible circuit" to --the first flexible circuit--.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-2, 8-10, and 12-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification is silent regarding "a ground return, claim 1, line 12, claim 2, line 14, claim 8, line 5".

Applicant should clarify what is that meant of "a ground return" to apply in this application.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 8-10, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fabian et al. (U. S. Patent 5,564,931) in view of Novelli (U. S. Patent 5,536,178).

As best understood to claims 1-2, Fabian discloses a system for electrically interconnecting a first circuit board (motherboard 106, column 3, line 67) and a second circuit board (daughter board 112, column 4, line 1), as shown in figures 1-9 comprising:

first and second flexible circuit portions (86-figure 4, column 6, line 8) having first and second set of raised conductive contacts (88, 90, column 4, line 27) respectively, the first and second flexible circuit portions disposed on first and second sides of the second circuit board (112); and

wherein a power signal (108, column 3, line 67) from the power module (not shown) is provided to the second circuit board (112) at least in part by one of the first set of raised conductive contacts (88) on the first flexible circuit and the second set of raised conductive contacts (90) on the second flexible circuit.

It would have been obvious to be well known in the art that the motherboard and the daughter board including power module or power circuit mounted on the these

boards, for example: IC chip or CPU for purpose of operating control signals to be received or transmitted data between these boards.

Further, Novelli teaches a circuit-interconnecting device comprising an interconnection between two boards (1, 14) having a plurality of components mounted on boards, such as module (3) and interface circuit (19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have power or power dissipation circuits mounted on the these boards as taught by Novelli to employ the system of Fabian in order to provide electrical powers and electrical communications between board to board.

As best understood to claims 8-9, Fabian discloses the system as shown in figures 1-9 wherein:

the first and second flexible circuit portions (86) further have first and second set of tabs (92, 94, column 6, line 36); and

the first set of tabs (92) are coupled to the first circuit board (106) by a first set of pads (108) on the first circuit board and the second set of tabs (94) are coupled to the first circuit board by a second set of pads (108) on the first circuit board.

As to claims 10, 12-13, Fabian discloses the system as shown in figures 1-9 further comprising a housing (16, column 4, line 3) having:

first and second housing sections (28-figure 2, 3, and 5);

the first and second housing sections (28) together forming an open end and a cavity, wherein at least a portion of the first and second flexible circuit portions and at least a portion of the second circuit board is disposed in the cavity;

a first compressible member (76-see figure 1, 3) disposed between the first housing section and the first flexible circuit; and a second compressible member (76-see figure 1, 3) disposed between the second housing section and the second flexible circuit; and wherein the first compressible member and the second compressible member is selected from the group comprising: an elastomer; and a spring.

As to claim 14, Fabian discloses the system as shown in figures 1-9 wherein the cavity in the housing is sized in the z-direction so as to allow the flexible circuit to accommodate vertical tolerance accumulation between the first circuit board and the second circuit board.

As to claim 15, Fabian discloses the system as shown in figures 1-9 wherein the first flexible circuit and the second flexible circuit are urged adjacent to one another proximate an edge of the second circuit board, thereby reducing interconnect impedance between the first circuit board and the second circuit board.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Niitsu et al., Hashiguchi, and Yoshizawa disclosed related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers

Application/Control Number: 10/005,024

Page 6

Art Unit: 2827

for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TD  
February 9, 2003

*David A. Zarneke*  
David A. Zarneke  
AV 2827